



SEQUENCE LISTING

<110> GELVIN, STANTON B.
MYSORE, KIRANKUMAR S.
WANG, KAN
FRAME, BRONWYN R.

<120> METHODS AND COMPOSITIONS FOR ENHANCED PLANT CELL
TRANSFORMATION

<130> 3220-94790

<140> 10/664,658

<141> 2003-09-18

<150> 10/098,161

<151> 2002-03-14

<150> PCT/US00/25260

<151> 2000-09-14

<150> 09/661,960

<151> 2000-09-14

<150> 60/154,158

<151> 1999-09-15

<160> 40

<170> PatentIn Ver. 3.3

<210> 1

<211> 1684

<212> DNA

<213> Arabidopsis thaliana

<400> 1

```
tcaaaaggaa agacattaaa ttagaaattg aattttgaaa catgttgata gatcatgtcc 60
ttcttctggg ttaccagtt ttgccctaaa acctaaaacc aacaggacca tcatttcgac 120
cacaccacat tgactgggtct gcccgaatct agctatgata tatcttaatt tccgtatgac 180
ttggatccat aaatattgaa atagatttgg tgaacacaaa ttactcttaa aacttcttct 240
ctttcatgca tgttcttttt ctcaactttaa catttttata tagtgacatt tttagtaatc 300
caacgttatt tatatgatta gtaattcatc aaatttatat agtgataaaa ttccacaatg 360
gttggttcaat aaaaatatga acaacacaat agaattagta aaagtgacta tgttaaatca 420
ttttcttcgc tgggggtttgg tgggcgagtt ctaaaacccat aagcggccca tttacttcgt 480
aaactcaatt cgattttgttc agcgttccaa gcccataata ttattttcaa gggcataaaa 540
taaattgagg tttatatgga aaatttgga attccctcgt ccagaagaaa ccaacaaaaa 600
actgcaaaag ttcaagcggg gggagaaaaa acttcagatc gtagccattc attaaattat 660
aatcaacggg ttaaacctct tcgatccgcg tactctattc cttatggtca aataacttaa 720
tctccacat atataacaac aatcagattt ctctctgtta atttcgtcaa gaaaaaaatt 780
cgattttttt gcgctctttg tgggttggtg ttgttgaaaa tggctggtcg tggaaaaact 840
cttggatccg gtggggcgaa gaaagctaca tctcggagta gcaaagccgg tcttcaattc 900
ccggtgggtc gtatcgctcg tttcttaaaa gccggtaaat acgcogaacg tgttgggtgcc 960
ggtgctccgg tttatctcgc cgccgttctc gaatatgtg ccgccgaggt aaaattacat 1020
cgtcttttct ctctttccca ttccgtttcc gatcttattc gtctgactct gtttttgctg 1080
gatcgattac gaatctaggg ttcttacatt ttccgaattt gacatgcaaa aattgaatta 1140
gattcgtgtt tgaattgaat tgttgtagtt ctgtaattga cctaattttg ggtttgttct 1200
gattggttga tggtaatcga gatcatatga atcgttgtag ttttctcgca agattctaaa 1260
```

```

tttttttcaa ttatggtaac caatttgatt tgagttgtta aagttctcaa atttggaag 1320
tttgatcatg aattgtgtgt tttgaatttg ttcaggttct tgaattagct ggaaacgcag 1380
caagagacaa caagaagaca cgtattgttc ctcgtcacat tcagcttgcg gtcagaaacg 1440
atgaggagct aagcaagctt cttggagatg tgacgattgc taatggagga gtgatgccta 1500
acatccacaa tctccttctc cctaagaagg ctggtgcttc aaagcctcag gaagattagg 1560
tcttttaaca caatgatata gaacacgtct ctcttttgca tttttcagga tatattgtgg 1620
tgtaaacaaa ttgacgctta gacaacttaa taacacattg cggacgtttt taatgtactg 1680
aatt 1684

```

<210> 2

<211> 638

<212> DNA

<213> *Arabidopsis thaliana*

<400> 2

```

taatttcgtc aagaaaaaaa ttcgattttt ttgcgctctt tgtgggttgt tgttgttgaa 60
aatggctggg cgtggaaaaa ctcttgatc cgggtgggcg aagaaagcta catctcggag 120
tagcaaagcc ggtcttcaat tcccgtggg tcgtatcgct cgtttcttaa aagccggtaa 180
atacgccgaa cgtgttggtg ccggtgctcc ggtttatctc gccgccgttc tcgaatat 240
ggccgccgag gttcttgaat tagctggaaa cgcagcaaga gacaacaaga agacacgtat 300
tgttcctcgt cacattcagc ttgcggtcag aaacgatgag gagctaagca agcttcttgg 360
agatgtgacg attgctaatt gaggagtgat gcctaacatc cacaatctcc ttctccctaa 420
gaaggctggg gcttcaaagc ctcaggaaga ttaggtcttt taacacaatg atatagaaca 480
cgtctctctt ttggctttag atctaataac ctaataacta gctagatgtt ttactttttt 540
gtatctttgc tttttttaat tcctttaggg atttgtttct ttccgtttct gtttcgacat 600
gttgtttctg tttttgtgaa tatatgaaag tattttgc 638

```

<210> 3

<211> 639

<212> DNA

<213> *Arabidopsis thaliana*

<400> 3

```

gagaaatttc tcagttacgc ttcattcctc tctaagagat cttttttcta tcttgggtag 60
tagagagaaa tggcgggtcg gggaaaaaaa cttggatctg gtgcagcgaa gaagtctact 120
tctcgtagta gcaaggctgg gcttcaattc cctgttggtc gtatcgctcg atttttgaaa 180
gccggttaagt acgccgagcg tgttggtgcc ggagctccgg tctatctcgc cgccgttctt 240
gaatacctcg ccgctgaggt acttgagctt gctgggaacg cagcgagaga caacaagaag 300
acccgtatag ttccacgaca cattcagctt gctgtgagga atgatgagga gctaagcaag 360
ttgcttggag atgtgacaat tgctaattga ggagtgatgc ctaacatcca caatctcctt 420
ctccccaaga aggtcggttc atctaagcct actgaagaag attaggttca ttacgaagat 480
agggaaagct ggaaactggt tgatatcaga taatgcttag gattgttttt tttttcattt 540
gcttttcttc tgcagcaatg gaagctgtgt ggttgtaacta gttgttaagg ttacctttgt 600
ttcactttat gtgaatatat gaagaaattg ttctatttc 639

```

<210> 4

<211> 801

<212> DNA

<213> *Arabidopsis thaliana*

<400> 4

```

aaatcactcc actcacaaaa tctcagcca tctctaata cattttacaa tcgcctcttc 60
aaatttcccg ataaacaaaa aatgagttcc ggcgccggca gtggaacaac taaaggtggc 120
agaggaaagc caaaagctac aaagtccgtc tctcgatctt cttaaagctgg tcttcaattt 180
cccgttgga gaatcgctag attccttaaa gccggtaaat acgccgaacg tgttggtgcc 240

```

```

gggtgctcccg tttatctctc cgccggttctc gaatacctcg ccgctgaggt attggagcta 300
gctggaaatg cagcaagaga taacaagaag acacgtatcg taccacggca cattcagctt 360
gcagtgagga acgatgaaga gcttagtaaa cttcttggaa gtgtaacaat tgctaataga 420
ggagttttgc ccaacattca tcagactctt ctcccatcaa aggttggaaa gaacaaaggc 480
gatatcggat ctgcttctca agagttttaa ttttattttt tagcttgtaa catagacatg 540
gctctctgtt ccacaatagt tttgggtattt tcatgttact caaaaactgt gtttgcaaat 600
ccagtaatga attcggtttg aagaagtga atagttaa attgatgtgt gaaatagcgg 660
attcaatggc ttcaatacaa gtgctaata gtttggcttt agccatggt tctgcaagtg 720
agactcttgc ttctttgtga gaatgtaata atgagacagt gttggaaaca gcccatttga 780
tatgagcctc cttttctgat t

```

<210> 5

<211> 357

<212> DNA

<213> *Arabidopsis thaliana*

<400> 5

```

atgggtgtgca acacgaatat actaaaagat gtgtcgacga agataagtgc ttttgaaaat 60
gttcggatga ttatgggtgga gggagagatg tttcaagtgg ctcgatttca caagcaactt 120
aagaacagag tttctgcaca tagtagtgtt ggtgcgactg atgttgtcta catgacttca 180
atccttgaat acctaactac agaggttctt cagttggccg aaaacactag caaagattta 240
aaagtgaaga ggataactcc aaggcatttg cagttggcga tcagaggaga tgaagagctt 300
gacacactca tcaaaggaa aattattgga ggaagtgtga tccctcacat ccactag 357

```

<210> 6

<211> 739

<212> DNA

<213> *Arabidopsis thaliana*

<400> 6

```

catatagaga agagcaaaac cctaaagccc actcatcttc tcaattccca gatcatctac 60
aatagtcatt tctcttcgat ttcttcaaac tctcatcaa tctgtttatct gttctaaatt 120
tcgaagaaga cgatgagtag aggcgcagga agcggaaaca ccaaagggtg cagaggaaaag 180
ccaaaggcca ccaaatccgt ctctcgatca tctaaagccg gtcttcaatt ccccgctcga 240
agaatcgcta gattcctcaa atccggtaaa tacgccgagc gtgtcgggtg cggagctccg 300
gtctatctct ccgctgttct cgagtacctc gccgccgagg tgttgagct ggcgggaaac 360
gcagcaaggg ataacaagaa gacacgtata gtaccaagac acattcagct tgcagtgagg 420
aacgatgaag agttaagcaa acttctggga agtgtgacga ttgcgaatgg aggagttttg 480
ccaaatattc atcagactct tttgccatcc aaggttgga agaacaagg agatattgga 540
tctgcttctc aggagttctg aggttcttag acttcttagt tcagttctct tgtttggatt 600
cggaacttgt aaaatagacc ctgatgggtg tttttgggga tcaaattagg ttttaaagct 660
aagtatatat ggcttttgcc taagtatgtt taattagtga atgatatgat atttcggaac 720
gaatcatgta tcaatggaa

```

<210> 7

<211> 699

<212> DNA

<213> *Arabidopsis thaliana*

<400> 7

```

ttaaatcaca aatcttcaac ttccgatact ttcaatctct ctaaactctc aatttcagta 60
atcgataacc gtagcaatgg aatccaccgg aaaagtgaag aaagctttcg gaggaagaaa 120
accacctggt gccccaaaa ccaaatccgt ttcgaaatcg atgaaagccg gtcttcaatt 180
cccagtggga agaactactc gtttctgaa gaaaggacga tacgctcaga gacttggtgg 240
tggtgctccg gtttacatgg ccgccgttct tgaatacctc gccgcagaag ttctggagct 300

```

```

tgctggtaac gctgcgagag ataacaagaa atcaaggata attccgaggc atcttcttct 360
cgcgataagg aacgatgaag aattggggaa acttctgagt ggtgtcaca tgcgtcacgg 420
tggtgttttg cctaacatca actctgttct attgcctaag aagtctgcca ctaaaccagc 480
tgaagaaaag gctaccaa at caccagtcaa gtctccaaag aaagctta at ctgctagagt 540
tttcgttgct agtttgtgtt tgagctctgg tgaatgtaga aatttgaagc ttttggatct 600
tagtttctat gtatttgggtg atttagaatg ttgttcaaaa tccttttcct aatcataaga 660
atztatgatc tatctattat acgcttcgtc taatctttt 699

```

<210> 8

<211> 759

<212> DNA

<213> *Arabidopsis thaliana*

<400> 8

```

caaatcgtaa accgccacaa aaccgaaaaa aacactaatt gtgctttccc ttttagattca 60
tttgtatttt cttttggagc ttttgaacaa tggagtcac acaagcaacg acgaagccaa 120
cgagaggagc aggaggaagg aaaggtggag ataggaagaa gagtgtagt aaatctgtta 180
aagctgggtc tcaatttccc gttggtcgta tcgctcgta cttgaagaaa ggtcggtagc 240
ctctccgata cggttccggt gctccggttt acctcgccgc cgttctcgaa tacctagccg 300
ccgaggtact tgagctagct gggaaacgcag cgagagataa taagaagaac aggataaacc 360
ctaggcatct atgttttagcg ataaggaacg atgaggaatt ggggagattg cttcatggag 420
ttactattgc tagtgggtgt gttcttccaa acattaatcc agttcttctt cctaagaaat 480
caacagcttc ttcttctcaa gcggagaaag cttctgctac caaatctcct aagaaggctt 540
gataaagaat agtatcgatg ttgctttttg gttatattcg gatcttagat gaagaagaag 600
aagaagaaga aacaacttgt tttttgtttt agaggatttg ttagggtatc tgaaatcttc 660
ttctctttgt tttggtttgt cttatgtaaa aaccatggga agatgattat gtttggttaac 720
gcaattttgta atggaaaata attaatgtct gggattagt 759

```

<210> 9

<211> 674

<212> DNA

<213> *Arabidopsis thaliana*

<400> 9

```

aattcgacgt ctctcttttg tctctgtatc gattttctcg ccgcgaattt cgaatagggt 60
cttcaccata agcttgagat cttatttctc tactgttctt tgcttcttct ctatcgatat 120
ggctggtaaa ggtgggaaag ggcttctagc tgcgaagacg acggcagcag ctgcaaacaa 180
agacagtgtt aagaagaaat ccatctctcg ctcttctcgt gctgggtattc agtttccagt 240
gggtcgatt catcgtaac tcaagcaaag agtttcagca catggaagag ttggtgccac 300
tgctgctgtt tacactgcat caattctaga atacttgact gctgaagtac tcgagttagc 360
tggaaatgag agcaaggatc tcaaagtga gagaaattaca ccaagacatt tgcagcttgc 420
aatcagagga gatgaggaac ttgacactct catcaaagga accattgcag gaggaggtgt 480
gatccctcac atccacaagt cccttgtcaa caaagtcacc aaggattgag tttcgtcttc 540
tgagtccata gtctctatta tactatgtgc tcttttctag acgccctcat gtgtatatgg 600
gttcattgta tctcttaggt ctctcgtttt agactcatac tcttggtatt ttgctaattgc 660
ttacatgatt gagg 674

```

<210> 10

<211> 726

<212> DNA

<213> *Arabidopsis thaliana*

<400> 10

```

atcgggagac tctcttccga gctcatcttc ttctctctct ttttatcttt gggtgtgcga 60
tctcctttct ctttcaatct ccaaggattt tactgtgaga tatttggcgg gaaaatgtcg 120

```

```

gggaaagggtg ctaaagggttt gattatgggg aaacccagcg gtagcgacaa ggataaggac 180
aagaagaagc ctatcactcg ttcttctcga gctgggtctcc agttcccagt tggtaggggtg 240
catcgtctgt taaagacaag gtccactgct catggaaggg ttggagcaac tgcagctgtt 300
tacacagcag caatattgga gtatctgact gcagaagttt tggagtggc tggtaacgcc 360
agcaaggact tgaagggtgaa acgtatctcg ccgaggcatt tgcagcttgc gattcgtgga 420
gatgaggagc tcgatactct catcaaagga actatagctg gtgggtggagt catccctcat 480
atccacaaga gtctcatcaa caaatccgcc aaggaatagg acttttttag ttaccgcgtt 540
tggtctgtgt tgcttttctg ttttctaaat gtttttaaga gttgtgtgtt gataagatgc 600
tagagaagct ctttttagga tcgtttgcta ttgttcgttc gatcagcgta ctttgtgtta 660
gagacgccag tcgattttatc tatcttttaa aatgtattcg aatgattatc caaaaacat 720
ttctga                                     726

```

<210> 11

<211> 635

<212> DNA

<213> Arabidopsis thaliana

<400> 11

```

aacaacaaat tcgattctta taactgtttc cctctcatct ttacacaaaa gtattctaata 60
cgatttcaat ggcggtcgt ggtaaaacac tcggatctgg gtctgcgaag aaggcaacaa 120
caagaagcag caaagccggt ctccaattcc ctgtgggtcg tatcgctcgt ttcttgaaga 180
aaggcaaata cgccgaacgt gttggtgccg gagctccggt ttacttagcc gccgttctcg 240
aatacctcgc cgctgaggtt ttggaattgg ctggaaacgc agcgagggat aacaagaaga 300
cgaggattgt tccaaggcat attcaattgg cggtagaggaa cgatgaagaa ttgagcaaat 360
tgcttgagaa tgtgactatt gctaattggag gtgtgatgcc taacattcac aatcttcttc 420
ttcctaagaa gaccggtgct tccaagccat ctgctgaaga cgattgatta atcaacaaa 480
tccactctct tgtgtttttt gagtttttaa ggctttttaa gagtaattta gattagatct 540
atggtgaaga aagaatctat ctctgtgttt ttttgaattg aattgaatgt tcatatgctt 600
tcaatttctt atggaatcaa gattttaact tttct                                     635

```

<210> 12

<211> 615

<212> DNA

<213> Arabidopsis thaliana

<400> 12

```

ccttttgcag tctctcgtcg tcgtctcaag atctagaaga aggaaacaac aatttcaaga 60
gacatggcag gcaaagggtg aaaaggactc gtagctgcga agacgatggc tgctaacaag 120
gacaaagaca aggacaagaa gaaacccatc tctcgtctcg ctcggtcgtg tattcagttt 180
ccagttggac gaattcacag gcaactgaag acccgagtct cggcacatgg cagagtgggt 240
gccactgcag ccgtctacac agcttcaatc ctggagtatc tgacagcaga gggttcttgag 300
ttggctggga atgcgagcaa ggatctcaaa gtgaagagga taacgccaag gcatctgcag 360
ttggcgatta gaggagatga ggagctggac acactcatca aggggaacgat tgctggaggt 420
ggtgtgatcc ctcacatcca caagtctctc atcaacaaaa ccaccaagga gtgatgtgta 480
gctttttatg gtgtttgtat ttctgtagtc ttggactcat tttcctttat ccttttctta 540
gttctttgac tagtgttgac ctctcttgga catcctcagg tgtacattag ttaatttgaa 600
ctcttttagt tcctt                                     615

```

<210> 13

<211> 612

<212> DNA

<213> Arabidopsis thaliana

<400> 13

```

atggattccg gaaccaaagt gaagaaagga gccgctggaa gaagaagtgg tggaggtcct 60

```

```

aagaagaaac cggtttcccg ttccggttaaa tccgggtctac agtttcctgt cggtaggatac 120
ggtcggtatc ttaagaaagg tcgttattcg aagcgtgtcg gaaccggagc tccggtctat 180
ctcgccgccg tcctcgagta tcttgctgct gaggttctcg agcttgctgg taacgctgca 240
agagataaca aaaagaaccg tattatacca cgccatgttc tattagcggg gaggaacgac 300
gaggagctag ggacactact caaaggcgta accattgcac acggcgggtg ttaccacaaac 360
ataaacccaa tactcctccc aaagaagtct gagaaagcag cttcaactac aaaaacacccc 420
aatcaccat caaaggcaac caaatccctt aagaaatctt agtacttctt tcttcattcc 480
tctgtataac ctactgtttc tatctctctg tacgtttctc tgtaaagaca gaacagaata 540
tctctttgtt gttgtgagaa agcttagttt ctctgatcgt cgttgtgaaa taaaaaatgc 600
aacgtttcat at 612

```

<210> 14

<211> 592

<212> DNA

<213> Arabidopsis thaliana

<400> 14

```

atcttaattt ccctcgcatt gagaattttc aactttttct atctctcttc ccaaatacaca 60
aatggcgggt cgcggaacaa ctctcggatc tggcggtgct aagaaatcaa catcgagaag 120
cagcaaagcc ggtctccaat tccccgttg tcttatcgct cgttttctaa agaacggcaa 180
gtacgcaaca cgtgttggtg ccggagctcc ggtttactta gccgccgttc tcgaatacct 240
cgccgctgag gtattggaat tggctggaaa cgcagctagg gataacaaga agactaggat 300
tgtgccacgt cacattcagc tcgcggtgag aaacgatgag gagctgagta aactgcttg 360
agatgtgacg attgctaatt gaggtgtgat gcctaacatt cacagtcttc ttcttcccaa 420
gaaagctggg gcttcaaac cttccgctga tgaagattag attagggatt tgtgttgg 480
ttgttttagc aattaatgtg tagcttagtc ttctcattaga ttagatctga attagttttc 540
attaatggtg ttgtgtagtc tctcttttgc ttcaaaaaca agtattaaaa tc 592

```

<210> 15

<211> 130

<212> PRT

<213> Arabidopsis thaliana

<400> 15

```

Met Ala Gly Arg Gly Lys Thr Leu Gly Ser Gly Gly Ala Lys Lys Ala
 1             5             10             15

Thr Ser Arg Ser Ser Lys Ala Gly Leu Gln Phe Pro Val Gly Arg Ile
      20             25             30

Ala Arg Phe Leu Lys Ala Gly Lys Tyr Ala Glu Arg Val Gly Ala Gly
      35             40             45

Ala Pro Val Tyr Leu Ala Ala Val Leu Glu Tyr Leu Ala Ala Glu Val
      50             55             60

Leu Glu Leu Ala Gly Asn Ala Ala Arg Asp Asn Lys Lys Thr Arg Ile
      65             70             75             80

Val Pro Arg His Ile Gln Leu Ala Val Arg Asn Asp Glu Glu Leu Ser
      85             90             95

Lys Leu Leu Gly Asp Val Thr Ile Ala Asn Gly Gly Val Met Pro Asn
      100            105            110

```

Ile His Asn Leu Leu Leu Pro Lys Lys Ala Gly Ala Ser Lys Pro Gln
 115 120 125

Glu Asp
 130

<210> 16
 <211> 131
 <212> PRT
 <213> Arabidopsis thaliana

<400> 16
 Met Ala Gly Arg Gly Lys Gln Leu Gly Ser Gly Ala Ala Lys Lys Ser
 1 5 10 15

Thr Ser Arg Ser Ser Lys Ala Gly Leu Gln Phe Pro Val Gly Arg Ile
 20 25 30

Ala Arg Phe Leu Lys Ala Gly Lys Tyr Ala Glu Arg Val Gly Ala Gly
 35 40 45

Ala Pro Val Tyr Leu Ala Ala Val Leu Glu Tyr Leu Ala Ala Glu Val
 50 55 60

Leu Glu Leu Ala Gly Asn Ala Ala Arg Asp Asn Lys Lys Thr Arg Ile
 65 70 75 80

Val Pro Arg His Ile Gln Leu Ala Val Arg Asn Asp Glu Glu Leu Ser
 85 90 95

Lys Leu Leu Gly Asp Val Thr Ile Ala Asn Gly Gly Val Met Pro Asn
 100 105 110

Ile His Asn Leu Leu Leu Pro Lys Lys Ala Gly Ser Ser Lys Pro Thr
 115 120 125

Glu Glu Asp
 130

<210> 17
 <211> 142
 <212> PRT
 <213> Arabidopsis thaliana

<400> 17
 Met Ser Ser Gly Ala Gly Ser Gly Thr Thr Lys Gly Gly Arg Gly Lys
 1 5 10 15

Pro Lys Ala Thr Lys Ser Val Ser Arg Ser Ser Lys Ala Gly Leu Gln
 20 25 30

Phe Pro Val Gly Arg Ile Ala Arg Phe Leu Lys Ala Gly Lys Tyr Ala
 35 40 45

Glu Arg Val Gly Ala Gly Ala Pro Val Tyr Leu Ser Ala Val Leu Glu
 50 55 60

Tyr Leu Ala Ala Glu Val Leu Glu Leu Ala Gly Asn Ala Ala Arg Asp
 65 70 75 80
 Asn Lys Lys Thr Arg Ile Val Pro Arg His Ile Gln Leu Ala Val Arg
 85 90 95
 Asn Asp Glu Glu Leu Ser Lys Leu Leu Gly Ser Val Thr Ile Ala Asn
 100 105 110
 Gly Gly Val Leu Pro Asn Ile His Gln Thr Leu Leu Pro Ser Lys Val
 115 120 125
 Gly Lys Asn Lys Gly Asp Ile Gly Ser Ala Ser Gln Glu Phe
 130 135 140

<210> 18
 <211> 118
 <212> PRT
 <213> Arabidopsis thaliana

<400> 18
 Met Val Cys Asn Thr Asn Ile Leu Lys Asp Val Ser Thr Lys Ile Ser
 1 5 10 15
 Ala Phe Glu Asn Val Arg Met Ile Met Val Glu Gly Glu Met Phe Gln
 20 25 30
 Val Ala Arg Ile His Lys Gln Leu Lys Asn Arg Val Ser Ala His Ser
 35 40 45
 Ser Val Gly Ala Thr Asp Val Val Tyr Met Thr Ser Ile Leu Glu Tyr
 50 55 60
 Leu Thr Thr Glu Val Leu Gln Leu Ala Glu Asn Thr Ser Lys Asp Leu
 65 70 75 80
 Lys Val Lys Arg Ile Thr Pro Arg His Leu Gln Leu Ala Ile Arg Gly
 85 90 95
 Asp Glu Glu Leu Asp Thr Leu Ile Lys Gly Thr Ile Ile Gly Gly Ser
 100 105 110
 Val Ile Pro His Ile His
 115

<210> 19
 <211> 142
 <212> PRT
 <213> Arabidopsis thaliana

<400> 19
 Met Ser Thr Gly Ala Gly Ser Gly Thr Thr Lys Gly Gly Arg Gly Lys
 1 5 10 15

Pro Lys Ala Thr Lys Ser Val Ser Arg Ser Ser Lys Ala Gly Leu Gln
 20 25 30

Phe Pro Val Gly Arg Ile Ala Arg Phe Leu Lys Ser Gly Lys Tyr Ala
 35 40 45

Glu Arg Val Gly Ala Gly Ala Pro Val Tyr Leu Ser Ala Val Leu Glu
 50 55 60

Tyr Leu Ala Ala Glu Val Leu Glu Leu Ala Gly Asn Ala Ala Arg Asp
 65 70 75 80

Asn Lys Lys Thr Arg Ile Val Pro Arg His Ile Gln Leu Ala Val Arg
 85 90 95

Asn Asp Glu Glu Leu Ser Lys Leu Leu Gly Ser Val Thr Ile Ala Asn
 100 105 110

Gly Gly Val Leu Pro Asn Ile His Gln Thr Leu Leu Pro Ser Lys Val
 115 120 125

Gly Lys Asn Lys Gly Asp Ile Gly Ser Ala Ser Gln Glu Phe
 130 135 140

<210> 20
 <211> 150
 <212> PRT
 <213> Arabidopsis thaliana

<400> 20
 Met Glu Ser Thr Gly Lys Val Lys Lys Ala Phe Gly Gly Arg Lys Pro
 1 5 10 15

Pro Gly Ala Pro Lys Thr Lys Ser Val Ser Lys Ser Met Lys Ala Gly
 20 25 30

Leu Gln Phe Pro Val Gly Arg Ile Thr Arg Phe Leu Lys Lys Gly Arg
 35 40 45

Tyr Ala Gln Arg Leu Gly Gly Gly Ala Pro Val Tyr Met Ala Ala Val
 50 55 60

Leu Glu Tyr Leu Ala Ala Glu Val Leu Glu Leu Ala Gly Asn Ala Ala
 65 70 75 80

Arg Asp Asn Lys Lys Ser Arg Ile Ile Pro Arg His Leu Leu Leu Ala
 85 90 95

Ile Arg Asn Asp Glu Glu Leu Gly Lys Leu Leu Ser Gly Val Thr Ile
 100 105 110

Ala His Gly Gly Val Leu Pro Asn Ile Asn Ser Val Leu Leu Pro Lys
 115 120 125

Lys Ser Ala Thr Lys Pro Ala Glu Glu Lys Ala Thr Lys Ser Pro Val
 130 135 140

Lys Ser Pro Lys Lys Ala
145 150

<210> 21
<211> 150
<212> PRT
<213> Arabidopsis thaliana

<400> 21
Met Glu Ser Ser Gln Ala Thr Thr Lys Pro Thr Arg Gly Ala Gly Gly
1 5 10 15
Arg Lys Gly Gly Asp Arg Lys Lys Ser Val Ser Lys Ser Val Lys Ala
20 25 30
Gly Leu Gln Phe Pro Val Gly Arg Ile Ala Arg Tyr Leu Lys Lys Gly
35 40 45
Arg Tyr Ala Leu Arg Tyr Gly Ser Gly Ala Pro Val Tyr Leu Ala Ala
50 55 60
Val Leu Glu Tyr Leu Ala Ala Glu Val Leu Glu Leu Ala Gly Asn Ala
65 70 75 80
Ala Arg Asp Asn Lys Lys Asn Arg Ile Asn Pro Arg His Leu Cys Leu
85 90 95
Ala Ile Arg Asn Asp Glu Glu Leu Gly Arg Leu Leu His Gly Val Thr
100 105 110
Ile Ala Ser Gly Gly Val Leu Pro Asn Ile Asn Pro Val Leu Leu Pro
115 120 125
Lys Lys Ser Thr Ala Ser Ser Ser Gln Ala Glu Lys Ala Ser Ala Thr
130 135 140
Lys Ser Pro Lys Lys Ala
145 150

<210> 22
<211> 136
<212> PRT
<213> Arabidopsis thaliana

<400> 22
Met Ala Gly Lys Gly Gly Lys Gly Leu Leu Ala Ala Lys Thr Thr Ala
1 5 10 15
Ala Ala Ala Asn Lys Asp Ser Val Lys Lys Lys Ser Ile Ser Arg Ser
20 25 30
Ser Arg Ala Gly Ile Gln Phe Pro Val Gly Arg Ile His Arg Gln Leu
35 40 45
Lys Gln Arg Val Ser Ala His Gly Arg Val Gly Ala Thr Ala Ala Val
50 55 60

Tyr Thr Ala Ser Ile Leu Glu Tyr Leu Thr Ala Glu Val Leu Glu Leu
 65 70 75 80
 Ala Gly Asn Ala Ser Lys Asp Leu Lys Val Lys Arg Ile Thr Pro Arg
 85 90 95
 His Leu Gln Leu Ala Ile Arg Gly Asp Glu Glu Leu Asp Thr Leu Ile
 100 105 110
 Lys Gly Thr Ile Ala Gly Gly Gly Val Ile Pro His Ile His Lys Ser
 115 120 125
 Leu Val Asn Lys Val Thr Lys Asp
 130 135

<210> 23
 <211> 134
 <212> PRT
 <213> Arabidopsis thaliana

<400> 23
 Met Ser Gly Lys Gly Ala Lys Gly Leu Ile Met Gly Lys Pro Ser Gly
 1 5 10 15
 Ser Asp Lys Asp Lys Asp Lys Lys Lys Pro Ile Thr Arg Ser Ser Arg
 20 25 30
 Ala Gly Leu Gln Phe Pro Val Gly Arg Val His Arg Leu Leu Lys Thr
 35 40 45
 Arg Ser Thr Ala His Gly Arg Val Gly Ala Thr Ala Ala Val Tyr Thr
 50 55 60
 Ala Ala Ile Leu Glu Tyr Leu Thr Ala Glu Val Leu Glu Leu Ala Gly
 65 70 75 80
 Asn Ala Ser Lys Asp Leu Lys Val Lys Arg Ile Ser Pro Arg His Leu
 85 90 95
 Gln Leu Ala Ile Arg Gly Asp Glu Glu Leu Asp Thr Leu Ile Lys Gly
 100 105 110
 Thr Ile Ala Gly Gly Gly Val Ile Pro His Ile His Lys Ser Leu Ile
 115 120 125
 Asn Lys Ser Ala Lys Glu
 130

<210> 24
 <211> 132
 <212> PRT
 <213> Arabidopsis thaliana

<400> 24

Met Ala Gly Arg Gly Lys Thr Leu Gly Ser Gly Ser Ala Lys Lys Ala
 1 5 10 15

Thr Thr Arg Ser Ser Lys Ala Gly Leu Gln Phe Pro Val Gly Arg Ile
 20 25 30

Ala Arg Phe Leu Lys Lys Gly Lys Tyr Ala Glu Arg Val Gly Ala Gly
 35 40 45

Ala Pro Val Tyr Leu Ala Ala Val Leu Glu Tyr Leu Ala Ala Glu Val
 50 55 60

Leu Glu Leu Ala Gly Asn Ala Ala Arg Asp Asn Lys Lys Thr Arg Ile
 65 70 75 80

Val Pro Arg His Ile Gln Leu Ala Val Arg Asn Asp Glu Glu Leu Ser
 85 90 95

Lys Leu Leu Gly Asp Val Thr Ile Ala Asn Gly Gly Val Met Pro Asn
 100 105 110

Ile His Asn Leu Leu Leu Pro Lys Lys Thr Gly Ala Ser Lys Pro Ser
 115 120 125

Ala Glu Asp Asp
 130

<210> 25

<211> 136

<212> PRT

<213> Arabidopsis thaliana

<400> 25

Met Ala Gly Lys Gly Gly Lys Gly Leu Val Ala Ala Lys Thr Met Ala
 1 5 10 15

Ala Asn Lys Asp Lys Asp Lys Asp Lys Lys Lys Pro Ile Ser Arg Ser
 20 25 30

Ala Arg Ala Gly Ile Gln Phe Pro Val Gly Arg Ile His Arg Gln Leu
 35 40 45

Lys Thr Arg Val Ser Ala His Gly Arg Val Gly Ala Thr Ala Ala Val
 50 55 60

Tyr Thr Ala Ser Ile Leu Glu Tyr Leu Thr Ala Glu Val Leu Glu Leu
 65 70 75 80

Ala Gly Asn Ala Ser Lys Asp Leu Lys Val Lys Arg Ile Thr Pro Arg
 85 90 95

His Leu Gln Leu Ala Ile Arg Gly Asp Glu Glu Leu Asp Thr Leu Ile
 100 105 110

Lys Gly Thr Ile Ala Gly Gly Gly Val Ile Pro His Ile His Lys Ser
 115 120 125

Leu Ile Asn Lys Thr Thr Lys Glu
130 135

<210> 26
<211> 153
<212> PRT
<213> Arabidopsis thaliana

<400> 26
Met Asp Ser Gly Thr Lys Val Lys Lys Gly Ala Ala Gly Arg Arg Ser
1 5 10 15
Gly Gly Gly Pro Lys Lys Lys Pro Val Ser Arg Ser Val Lys Ser Gly
20 25 30
Leu Gln Phe Pro Val Gly Arg Ile Gly Arg Tyr Leu Lys Lys Gly Arg
35 40 45
Tyr Ser Lys Arg Val Gly Thr Gly Ala Pro Val Tyr Leu Ala Ala Val
50 55 60
Leu Glu Tyr Leu Ala Ala Glu Val Leu Glu Leu Ala Gly Asn Ala Ala
65 70 75 80
Arg Asp Asn Lys Lys Asn Arg Ile Ile Pro Arg His Val Leu Leu Ala
85 90 95
Val Arg Asn Asp Glu Glu Leu Gly Thr Leu Leu Lys Gly Val Thr Ile
100 105 110
Ala His Gly Gly Val Leu Pro Asn Ile Asn Pro Ile Leu Leu Pro Lys
115 120 125
Lys Ser Glu Lys Ala Ala Ser Thr Thr Lys Thr Pro Lys Ser Pro Ser
130 135 140
Lys Ala Thr Lys Ser Pro Lys Lys Ser
145 150

<210> 27
<211> 132
<212> PRT
<213> Arabidopsis thaliana

<400> 27
Met Ala Gly Arg Gly Lys Thr Leu Gly Ser Gly Val Ala Lys Lys Ser
1 5 10 15
Thr Ser Arg Ser Ser Lys Ala Gly Leu Gln Phe Pro Val Gly Arg Ile
20 25 30
Ala Arg Phe Leu Lys Asn Gly Lys Tyr Ala Thr Arg Val Gly Ala Gly
35 40 45

Ala Pro Val Tyr Leu Ala Ala Val Leu Glu Tyr Leu Ala Ala Glu Val
50 55 60

Leu Glu Leu Ala Gly Asn Ala Ala Arg Asp Asn Lys Lys Thr Arg Ile
65 70 75 80

Val Pro Arg His Ile Gln Leu Ala Val Arg Asn Asp Glu Glu Leu Ser
85 90 95

Lys Leu Leu Gly Asp Val Thr Ile Ala Asn Gly Gly Val Met Pro Asn
100 105 110

Ile His Ser Leu Leu Leu Pro Lys Lys Ala Gly Ala Ser Lys Pro Ser
115 120 125

Ala Asp Glu Asp
130

<210> 28

<211> 1677

<212> DNA

<213> Arabidopsis thaliana

<400> 28

```
ctcacttttaa cttttttata tagtgacatt ttttagtaatc caacggttatt tatatgatta 60
gtaattcatc aaattttatat agtgataaaa ttccacaatg gttggttcaat aaaaatatga 120
acaacacaat agaattagta aaagtgacta tggttaaata ttttcttcgc tgggggttgg 180
tgggcgagtt ctaaaccat aagcggccca tttacttcgt aaactcaatt cgatttggtc 240
agcgttccaa gcccataata ttattttcaa gggcataaaa taaattgagg tttatatgga 300
aaatttggaa attccctcgt ccagaagaaa ccaacaaaaa ctgcaaaagt tcaagcgggtg 360
ggagaaaaaa cttcagatcg tagccattca ttaaattata atcaacggtt taaacctctt 420
cgatccgcgt actctattct tattggtcaa ataacttaat cctccaacat atataaacia 480
caatcagatt tctctctggt aatttcgtca agaaaaaaat tcgatttttt tgcgctcttt 540
gtgggttggt gttggtgaaa atggctgggtc gtggaaaaac tcttggtacc ggtggggcga 600
agaaagctac atctcggagt agcaaagccg gtcttcaatt cccggtgggt cgtatcgctc 660
gtttcttaaa agccggtaaa tacgccgaac gtgttggtgc cgggtgctccg gtttatctcg 720
ccgccgttct cgaatatttg gccgccgagg taaaattaca tcgtcttttc tctctttccc 780
attccgtttc cgatcttatt cgtctgactc tgtttttgcg tgatcgatta cgaatctagg 840
gttcttacat tttccgaatt tgacatgcaa aaattgaatt agattcgtgt ttgaattgaa 900
ttgttgtagt tctgtaattg acctaatatt gggtttggtc tgattggttg atggtaatcg 960
agatcatatg aatcggttga gttttctcgc aagattctaa atttttttca attatggtaa 1020
ccaatttgat ttgagttggt aaagtcttca aatttggaaa gtttgatcat gaattgtgtg 1080
ttttgaattt gttcagggtc ttgaattagc tggaaacgca gcaagagaca acaagaagac 1140
acgtattggt cctcgtcaca ttcagcttgc ggtcagaaac gatgaggagc taagcaagct 1200
tcttgagat gtgacgattg ctaatggagg agtgatgcct aacatccaca atctccttct 1260
ccctaagaag gctggtgctt caaagcctca ggaagattag gtcttttaac acaatgatat 1320
agaacacgtc tctcttttggt ctttagatct aataacctaa taactagcta gatgttttca 1380
ctttttgtat ctttgctttt ttttaattcct ttagggattt gtttctttcc gtttctggtt 1440
cgacatggtg tttctgtttt tgtgaatata tgaaagtatt ttgcgaaata tgaatgataa 1500
tgtctttcaa aaatgctgat gccttattca acaagcaaac actgcacttt gtagaagtat 1560
aaagattttc tttgttggtg atagtaatat tacaagaaag aaaaaaacac aaaggattat 1620
tattctatgg ccaacaagat tgaaaaaata tgaaaagaaa gtattttctaa gactaaa 1677
```

<210> 29
 <211> 1903
 <212> DNA
 <213> *Arabidopsis thaliana*

<400> 29
 tgtggctttt cagccaccac aatatgtcat acaacttgca actggtatta tccaaattta 60
 aaccacata aagaatacgt ctaaaaagca aacaataatc attacaacac ttagtaagtt 120
 ataacttctc cctaacttct ttgaaatttt gataaaaagg aaaatacata tgtacaagaa 180
 gtgaagaaac aattttatttg ggccgaacag tgttaaattt tgggccagat aacggtaaaa 240
 taaaaaggag tattttctatt taacaagccc aatatagccc atataacaat ccattgaaat 300
 catcggagaa ccaaaaaaag gacaaagcag gtgggcgcac gaatctcaa tccagtcct 360
 taaacttgta acaatctgac ggtgtagatt atcgatccat gcagtgtcat atcattgggtc 420
 agaaatattt tctatctcgc cactatatta atcatcatgg cgggtttcgc tgatactcat 480
 tattgttatt tttgacagag agaaatttct cagttacgct tcatcctcct ctaagagatc 540
 ttttttctat cttgggtagt agagagaaat ggccgggtcgg ggaaaaacaac ttggatctgg 600
 tgcagcgaag aagtctactt ctctgtagtag caaggctggg cttcaattcc ctgttggtcg 660
 tatcgctcga tttttgaaag ccggtaaagta ccgcgagcgt gttggtgccg gagctccggt 720
 ctatctcgcg gccgttcttg aatacctcgc cgctgaggta atcagtctct tctatttatc 780
 acctgtttaa tttactcttt ttaccgaatt aaatggttat agcttgcatc tagggttctg 840
 gatttttagat tttcttacct ctttcgttaa attatgcgaa atttggaata ttttagaatg 900
 cattagttcc ttagtttgtt tttttcttgg gaaaaattgt ccattttttt tgtgtagttt 960
 tgagctcaat ttgtgtttct ttgtgctcat actgcttata gaaattaggg ttaaatttgt 1020
 tccttactac tttgagttat catagttggc actgattgat actgtcaatt gtgttctcaa 1080
 attcgaaaaa tgttgttgtt cacttagttt tgtctttgga tatgtgaaca tgtctgcttg 1140
 ggaactgaat ttggtgcgct cactttctat aggtacttga gcttgctggg aacgcagcga 1200
 gagacaacaa gaagacccgt atagttccac gacacattca gcttgctgtg aggaatgatg 1260
 aggagctaag caagttgctt ggagatgtga caattgctaa tggaggagtg atgcctaaca 1320
 tccacaatct ccttctcccc aagaaggctg gttcatctaa gcctactgaa gaagattagg 1380
 ttcattacta agatagggaa agctggaaac tggttgatat cagataatgc ttaggattgt 1440
 ttttttttcc atttgctttt cctctgcagc aatggaagct gtgtggttgt actagttgtt 1500
 aaggttacct ttgtttcact ttatgtgaat atatgaagaa attgttctat ttcagtcctg 1560
 actccacttc tttagcattg ttcactgatt catttggtgt tcctgaaagt caatttaaat 1620
 tccttcgata agctacacga aactgcacac atagtcacat gtaacttggt tttaaacttt 1680
 ttgttttgtt ttgttttttg ttgaaaaact gagaaaaaaa gaatcagtag acccataatc 1740
 acagaaaagt caagccacca agcgattcga catagacagt ggagaagtga cgagattgag 1800
 agaatcgag cgagagagag agagagacag ggacgattcg gtttagagct ctcgtatgag 1860
 gtatatttca atttcgtttt cggcgatatc ttgtgtcgca aat 1903

<210> 30
 <211> 1609
 <212> DNA
 <213> *Arabidopsis thaliana*

<400> 30
 gtttgacttt ataaaaacat gcagaaatgt acaagaata tatacatata attatcttaa 60
 ttaatttaat aactatcaat ctgtcatact acaccactat caatctatca tcatcaccac 120
 cattatgctt gacagtcact ttttagttgg cccatgttaa agctgtttgt gttatttgtt 180
 attgggctta tccttcaacta ccatttgatt gaaatttatc tcatgaccca acaaattgag 240
 ctaatttcgg ttcaacattg gatgttaatt ttttttcaa ccgaaccgaa ttatagtttt 300
 ggtgcatttt ttctaaaccg aattttaaca caaatagtaa tcgtcttaaa aaattcaccg 360
 acttggttaa aagaggcgga aaaaaaaacc cgcgagaact tacaatgggt ccacgctggc 420
 aatccgcgtg actcacaact aaccaatcaa aatccattat ctcaacgcta tctatctcag 480
 aaatcacaa ctaaaccccta aatcactcca ctcaaaaat cctcagccat ctctaatac 540
 attttacaat cgcctcttca aatttcccga taaacaaaa atgagttccg gcgccggcag 600
 tggaacaact aaaggtggca gaggaaagcc aaaagctaca aagtccgtct ctcgatcttc 660
 taaagctggt cttcaatttc ccgttggaag aatcgctaga ttccttaaag ccggtaaata 720

cgccgaacgt	gttgggtgccg	gtgctcccgt	ttatctctcc	gccgttctcg	aatacctcgc	780
cgctgaggta	acaaacaatc	ttctgtttgg	tatttagtct	tttagtctct	atgatgagaa	840
tcactcgtaa	ttgatatatc	actagatttt	tcgatgttta	ccgaatcttt	gatttttgatt	900
tgatgttaag	gtgtcttcta	gagtctgac	tcttatatga	tggtgatata	atcattaggt	960
attggagcta	gctggaaatg	cagcaagaga	taacaagaag	acacgtatcg	taccacggca	1020
cattcagctt	gcagtgaagga	acgatgaaga	gcttagtaaa	cttcttggaa	gtgtaacaat	1080
tgctaattgga	ggagttttgc	ccaacattca	tcagactctt	ctcccatcaa	aggttggaaa	1140
gaacaaaggc	gatatcggat	ctgcttctca	agagttttta	ttttattttt	tagcttgtaa	1200
catagacatg	gctctctgtt	ccacaatagt	tttgggtattt	tcagtgttact	caaaaactgt	1260
gtttgcaaat	ccagtaatga	attcggtttg	aagaagtga	atagttaa	ttgatgtgtt	1320
gaaatagcgg	attcaatggc	ttcaatacaa	gtgctaatag	gtttggcttt	agccatgggt	1380
tctgcaagtg	agactcttgc	ttctttgtga	gaattgaata	atgagacagt	gttggaaaca	1440
gcccatttga	tatgagcctc	cttttctgat	tctgtgaagc	cgagccaccg	cagaacatcg	1500
ttcaactgca	acactcaaat	ctcaaaaaat	acattagaag	attatagtct	catgactatg	1560
agtgggaagga	gacttgagtt	tgtattacct	tgacaatatc	tgagtatatg		1609

<210> 31

<211> 2148

<212> DNA

<213> *Arabidopsis thaliana*

<400> 31

ttaagactga	taagtatcaa	caagcgaagt	tttgatttgc	ttggtgaagc	tagtctcgga	60
cttcaaata	cacttgatat	gttcatacat	gtaacatgtg	aagaagaact	tattttggaa	120
cccaaagaca	tgaatagttt	gaaaaccttt	ctcatgagaa	tatgcaatgt	taagatcttt	180
tacttgctct	atgacactct	ataggtcagt	cccatctttt	ttgttaaagt	ttacaattga	240
caattagtta	gtgatgat	agttaacttg	gtttttgttt	cacgaactta	atgactgaag	300
ttaaacaata	caggatttca	acaacctgat	tcagttaact	attttgccat	gtatagagag	360
ggaatcacctg	ccaaatctac	tcaagaattt	tccaaatcta	gaaaccttct	tctatgaagt	420
aacatacaca	ttcttgatat	taacaactga	catgatttta	cacagtaata	aattttgaaa	480
cggtctcatt	ttatgtttca	tggtgtgcaa	cacgaatata	ctaaaagatg	tgctgacgaa	540
gataagtgtc	tttgaaaatg	ttcggatgat	tatggtggag	ggagagatgg	tatgatagga	600
gaagtctttt	gctcatagaa	gtagagtgtc	aacagttcac	aatgacttta	caatctatgt	660
ggctccttga	aacaataaac	tatggatgtg	cataactaat	ggacaatctt	catatttagg	720
aatgactaaa	atatcttaac	taatgcttaa	acactcatgt	gtcaccaaat	aacaatacat	780
ggaacatgag	tgtcaataat	gaccttgat	tgtaatgggt	cgctggttta	gttgaagttc	840
cagtagcaca	taccgaaact	acattccttt	tttatggagt	aattctgttt	taggatattt	900
ttagggtttt	tggattttgt	ataagacaaa	aaaaaacaca	aacacaataa	gctacttaac	960
tagaaaataa	catcatcata	taatttgact	aaataaacia	atcacttctt	cgtgggtttt	1020
ttgatgagag	acatgtggat	gtgagagact	actccttatc	caccaattgt	tactttgata	1080
aatggatcaa	gatccctatc	tcctgcatc	accaactata	aatgcattag	agtaatcctc	1140
tttattttct	tatcattgat	tgtgtttttc	ggtaactcaa	taacctatga	agttaggcac	1200
tctaggattg	aagccatgta	gtcaacaaca	atagcaccaa	gtcgaccatg	ttgtagatac	1260
tctagtcttg	agttgcatgt	gaatacgacc	cactagaaat	tgaaataaac	aaagaaattt	1320
cattttttgt	agtataat	gataaaat	tatactgata	ttgtttcttt	gtttctttca	1380
gtttcaagtg	gctcgtattc	acaagcaact	taagaacaga	gtttctgcac	atagtagtgt	1440
tggtgagcgt	gatgttgtct	acatgacttc	aatccttgaa	tacctaacta	cagaggttct	1500
tcagttggcc	gaaaacacta	gcaaagattt	aaaagtgaag	aggataactc	caaggcattt	1560
gcagttggcg	atcagaggag	atgaagagct	tgacacactc	atcaaaggaa	caattatttg	1620
aggaagtgtg	atccctcaca	tccactagtc	tcatacaaca	aacaaccaag	gagtgatttg	1680
tttcttaagt	taactaatat	gatgtgat	gctagttaag	tagcttatgg	tgtttcagtt	1740
actctagttt	tggatcggag	aagtagttta	agtgttaagt	cttgagacat	cataatttta	1800
cgtctcatct	cgtaaacgat	aggagaagtt	cttctgtcct	agagtttttg	tgctaaacaa	1860
ttcacagtga	tatgcattcc	atgtggctcc	ttaaaacact	caacctatga	tgcaacaagca	1920
gtggaccatc	ttcatattca	tgactgacta	aaatattgtc	atcaatgctt	actaatatgt	1980
caaattgtag	taactcgggtg	gtttaattga	agtttcattg	ttatatatat	ggcgtatagg	2040
cctaaagtgtg	tatgaagttt	tgattgatga	gttaagacat	cgtattatat	aaagtaggat	2100

tttcaagtta ctaactcaac tgattaagac acaagtcaag tactttga

2148

<210> 32

<211> 1621

<212> DNA

<213> *Arabidopsis thaliana*

<400> 32

```

agtaaaagga gatgtacgaa ccatagatca cataataatt gaaagggtag atgatctgcc 60
acgttggcaa tccgtgtgat ctaaagtcta acaaatacaca atcaatctta gtagcctata 120
tattgattta ttcttggtgc ttgatcaata aagggtacat catagaacta aaatcatatg 180
aaaccgaatc gatcaaccct ggccatcttt taaataacca tcaatacatt gggatgatca 240
atccacaata aatgtattga tgtaaattaa aaatatgaac ttgtaacaga tcaagattca 300
gggtctaaaa ttatagaaaag cttaataatg gaggactatt tcactaaaat cacttttcgt 360
ttgtacatta ttttcaaaaa gtaaaaggag atgtacgaac catagatcac ataataattg 420
aaagggtaga tgatctgcca cgttggcaat ccgtgtgatc taaagtctaa caaatcacaa 480
tcaatcttag tagcctatac atatagagaa gagcaaaaacc cttaaagcca ctcatcttct 540
caattcccag atcatctaca atagtcatctt ctcttcgatt tcttcaaact ctcatcaaat 600
cgtttatctg ttctaaatct cgaagaagac gatgagtaca ggcgcaggaa gcggaacaac 660
caaaggtggc agaggaaaagc caaaggccac caaatccgtc tctcgatcat cttaaagccgg 720
tcttcaattc cccgtcggaa gaatcgctag attcctcaaa tccggtaaatt acgccgagcg 780
tgtcggtgac ggagctccgg tctatctctc cgctgttctc gagtacctcg ccgccgaggt 840
aatatttttt tcttgctctc caatttggtt ttcaatttcg atttggtcac atctgaattg 900
gatcttgtag tgatttgatt ttgatttggt ttgggttgat aggtgttgga gctggcgagg 960
aacgcagcaa gggataacaa gaagacacgt atagtaccaa gacacattca gcttgagctg 1020
aggaacgatg aagagttaag caaacttctg ggaagtgtga cgattgcaaa tggaggagtt 1080
ttgccaataa ttcacagacac tcttttgcca tccaaggttg gcaagaacaa aggagatatt 1140
ggatctgctt ctcaggagtt ctgaggttct tagacttctt agttcagttc tcttgtttgg 1200
attcggaaat tgtaaaatag accctgatgg tgttttttgg ggatcaaat aggttttaaa 1260
gctaagtata tttggctttt gcctaagtat gtttaattag tgaatgatat gatatttcgg 1320
aacgaatcat gtatcaatgg aactgaatta atcgatatat caaccagaa acattttgaa 1380
acacaaacta tgcatacttg attctttatt gcagatacat gcaactcatg gagcctaata 1440
ctaaacattg ctttgatcat gtttcaattt aaccagactc attttttaat tcaccaggg 1500
agtaaaactc attaggtttt gggcctaact gcctcagtc tggtaatcct gaattaaact 1560
cactaagtta ccctcatctg ttggttcgca cctgaattag ctcgctaaat taccttcac 1620
t
1621

```

<210> 33

<211> 1487

<212> DNA

<213> *Arabidopsis thaliana*

<400> 33

```

gtctataaac tattaaactc tagggtttaa tatgtacaaa ttctcttagg ctacttttga 60
ttaggactcc cttgtgaatg tcaaaacata atgcgacccc aaaatatctt tataagtata 120
attgttaatc ttttgattct aaaatattgt tcattgtttt ccaattaggg cttcaaagac 180
tcttgagaag catcattaaa catttaaatg tcaatgacta actttacatt taacatataa 240
ttaatctacc gaaaattagt gtaagttgca agaaattatc caaaaaccca aaataaagca 300
agcgctaaac ttttaaaatg ctacaaaaaa actggcgccg tttcaaaaag catacctctt 360
tttgattggt taatacatag tcacgcggat cgtgctttat ttgaacatcc accgtcgata 420
gactaaatcc aacggataat aatcctctcc cttctttttt tttcatttac ctataaatat 480
cacagagtac ctttcaactt taaatcacaa atcttcaact tccgataact tcaatctctc 540
taaaactctc atttcagtaa tcgataaccc tagcaatgga atccaccgga aaagtgaaga 600
aagctttcgg aggaagaaaa ccacctgggt ccccaaaaac caaatcggtt tcgaaatcga 660
tgaaagccgg tcttcaattc ccagtgggaa gaatcactcg tttcctgaag aaaggacgat 720
acgctcagag acttggtggt ggtgctccgg ttacatggc cgccgttctt gaatacctcg 780

```

```

ccgcagaagt aagtgtttcc cgatctggat tttctagtaa gatttttttt ttacatttca 840
aaatcaatth tctgattcga atttattgat ctcaggttct ggagcttgct ggtaacgctg 900
cgagagataa caagaaatca aggataatth cgaggcatct tcttctcgcg ataaggaacg 960
atgaagaatt ggggaaactt ctgagtggtg tcacaatcgc tcacggtggt gttttgecta 1020
acatcaactc tgttctattg cctaagaagt ctgccactaa accagctgaa gaaaaggcta 1080
ccaaatcacc agtcaagtct ccaaagaaag cttaatctgc tagagttttc gttgctagtt 1140
tgtgtttgag ctctggtgaa tgtagaaatt tgaagctttt ggatcttagt ttctatgtat 1200
ttggtgattt agaatgttgt tcaaaatcct tttcctaath ataagaattt atgatctatc 1260
tattatacgc ttcgtctaath cttttggthc actcgtcgta atgtcattag tgaatattth 1320
ataaacaact ttgtcatcga cattaacgaa cctttttatt cgctgtgcta aattttttctt 1380
ttaggtgaag ccaaatctaa catgttctct tctctctttg ttcgttgtaa ttccataaca 1440
tctccattac gatgttttgc gattcgagga tcttgttcta aattattt 1487

```

<210> 34

<211> 1740

<212> DNA

<213> *Arabidopsis thaliana*

<400> 34

```

cgtggtatat acatacacgt cgttctttcc tcattttaag tcttcatttg tcatggagct 60
tagaagatta cagttgaata tcttaaaactc tctttcttaa tcacattttt tgtacttatt 120
acactaatta aaaccagagt ttgggtaata atttttgttt ccttaatttt cgaattatc 180
cgtaattttt ctactctaath tctctggata ttttaataaa tagtaataat ctgctgtcaa 240
aataagataa gaaaaagaca taaagctgat tatctttagt aacgtgtggg gaatgaatct 300
aacggctgat atcactcaag tgttcttttc cacttctctt ttacaacacc cactgtaat 360
gtcatacaaa gaagtcatta cgaccgttag atcaaagcca acaagatcca atcttaacgg 420
ctaagataaa ttactacacg gatcgccaac gtggcaatac gtggtatata catacacgtc 480
gttcttttcc ctttttaagc aaatcgtaaa ccgccacaaa accgaaaaaa acactaattg 540
tgcttttccct ttagattcat ttgtattttc ttttgagct tttgaacaat ggagtcata 600
caagcaacga cgaagccaac gagaggagca ggaggaagga aaggtggaga taggaagaag 660
agtgttagta aatctgttaa agctggtctt caatttcccg ttggtcgtat cgctcgttac 720
ttgaagaaag gtcggtacgc tctccgatac ggttccggtg ctccggttta cctcgcgcc 780
gttctcgaat acctagccgc cgaggtatat tcaatctcag atctcgttgc attttgaatc 840
gatttatttt gtgtatctat tagatctgtt taattttgaa gttctaataa attgaaccgg 900
tttggtttag gtacttgagc tagctgggaa cgcagcgaga gataataaga agaacaggat 960
aaaccttagc catctatgtt tagcgataag gaacgatgag gaattgggga gattgcttca 1020
tggagttact attgctagtg gtggtgttct tccaaacatt aatccagttc ttcttcttaa 1080
gaaatcaaca gcttcttctt ctcaagcggg gaaagcttct gctaccaaath ctctaagaa 1140
ggcttgataa agaatagtat cgatgttgct ttttggttat attcggatct tagatgaaga 1200
agaagaagaa gaagaaacaa cttgtttttt gtttttagagg atttgtgtag gtatctgaaa 1260
tcttcttctc tttgttttgg tttgtcttat gtaaaaacca tgggaagatg attatgtttg 1320
ttaacgcaat ttgtaatgga aaataattaa gttctgggat tagtaacttc atctgtctaa 1380
ttaatttctg ggtttcgtac ttgttgattt aaacaattta ggtggattaa ttgaaatgg 1440
tttggtatac acatggaaag attcagtaaa gttaatgaca ttaattaaag tagataataa 1500
tcacgaaaaa catgacatta attaagaaaa tgattgttca aattgggctt tgtttgggct 1560
tagttgatag gcccgttaga atttatgttc ttggttcac taccagattc tggaaaaagg 1620
gttttggttt tccggtgggg tttagaattt aaacaagacg cgatttcgaa tttcgttctt 1680
gtagaatcaa attgtttggg ttcaatcttg gatttgcat gatgaatttt ctggttcgat 1740

```

<210> 35

<211> 2151

<212> DNA

<213> *Arabidopsis thaliana*

<400> 35

```

cacacttaaa tctttctttg ttttaataaaa agtataatca aaaatttgaa agagagaata 60

```

```

cgtttcatta ttttttttaa ataccatcat gagaggtggt atgaatatcc actatatattt 120
aactacaaat cttcttttga ataatttgca attttatgtg atataaaattt ttagtaaaat 180
aattattttc caacaacaca agatttgaac gaatttttga aagatatcta aatataaaat 240
taacatgttg acccaaaaaa tgaagaatta taacaattta gaaaagcccg cccaacaaga 300
tccacaagag ctaaacaaaa tccggcccaa caataagtcc aaactttaaa agctctccc 360
cacaattttc gagcatcccg ctctcgttt caggtacttc cctctctgag ctagggtttt 420
aattcgacgt ctctcttttg tctctgtatc gattttctcg ccgcgaattt cgaatagggt 480
cttcaccata agcttgagat cttatttctc tactgttctt tgcttcttct ctatcgggta 540
attatcttct ttgatttcga cgacggatct ggaaattctg aaattttgtg aagctctttt 600
ctttttgttt ggtttctgta gatatggctg gtaaagggtg gaaagggctt ctagtgcga 660
agacgacggc agcagctgca aacaaagaca gtgttaagaa gaaatccatc tctcgctctt 720
ctcgtgctgg tattcaggtt tccctcaaac cctagctcct tttttgagaa tcgagtggct 780
cggagtttga atgtgcgtta ggtttttttg attatgttca attgtgaatt gggaaccaga 840
tttgatattc gttctgtgtt taatgcattt ttgggaaatt gcttcctctc tgatttctgg 900
aaatatgttt tactctgtgt ttcttcatta aagttacaat gtgtgcttga tactggactt 960
ttattgtctc tatgactcta tgccaagtag cattattttt ggtgtgtctc attttatgac 1020
tgtgatattg tagcttgcat gttctatacg gttgatacac acaagcttga tttctctgtg 1080
tgcacttctt gtagttgctg atgaagaaaa acagtgtctat ctatctagat tctagagtaa 1140
tttgtataca atagagtact accaattgat actgagcctt aatgggagca tctacttgtc 1200
ctctctgtgt gtgtgttctg gaaatctaag ccaaaccattg tctgttatt gtcattagt 1260
tacttttggg attcttcctt gttaaagccg aattgtacat atcattgaat ccatgttact 1320
tatatggctt attgctgcag tgtcttttat tatgataatc acttgatacg ttgtaatatc 1380
tatctataag atgtagtaag tgaatgatca agcaaattaa aggactgtgt ggtagttta 1440
agtgtcttat taatatatat ctatctacaa gaagatctgt ctcagctcga ttaatgggaa 1500
gcctttctct gtgccctaaa gttatgtgct tattttgttt tctcaatgtg gtattctttc 1560
agtttccagt gggctgtatt catcgtcaac tcaagcaaag agtttcagca catggaagag 1620
ttgggtgccac tgctgctgtt tacactgcat caattctaga atacttgact gctgaagtac 1680
tcgagttagc tggaaatgcg agcaaggatc tcaaagtga gagaattaca ccaagacatt 1740
tgcagcttgc aatcagagga gatgaggaac ttgacactct catcaaagga accattgcag 1800
gaggagggtg gatccctcac atccacaagt ccttgtcaa caaagtcacc aaggattgag 1860
tttcgctctc tgagtcctaa gtctctatta tactatgtgc tcttttctag acgccctcat 1920
gtgtatatgg gttcattgta tctcttaggt ctctcgttt agactcatac tcttgttatt 1980
ttgctaagc ttacatgatt gaggatgatg gttctgtctt tcttggtttc ctatactgtt 2040
gcatgccccct cttctagcta accccggaca atagaaatcc tcgattagat gatgaaaacc 2100
attcaacatc tatgtagcaa ctgatgacaa cagcgtttga ttgtttcaca a 2151

```

<210> 36

<211> 1883

<212> DNA

<213> Arabidopsis thaliana

<400> 36

```

ttagggacga atttgtgatt tatgattatt tgactttaga ttgggcttgg gcttttttctg 60
caggttgggg tataagggtg aaatcgtcat ttgacagacc gacttgtctc tctctatctg 120
gggaaaacgt cttttcacat caacaaagaa ggaaaaaccg cagagaaacc atctgatact 180
taagctaaac tgagcgtaca aaaagcctct atatgtctta gttcatgatt tgctatgttt 240
tgttccaga ctgaatgatt atacagagaa aacaaacaaa gatctccctc tcttcttttg 300
aatcaaaaca tgggtgttaa aatttaatag ttttctttca agtgtctttt tcaatattga 360
actaaattta gggacgaatt tgtgatttat gattatttga ctttagattg ggcttgggct 420
tttttcgcag gttgggggat aagggtaaaa tcgtcatttg acagaccgac ttgtctctct 480
ctatctgggg aaaacgtcta tccgggagact cctctctgag ctcatcttct tctctctctt 540
tttatctttg gttgtgcgat ctcccttctc tttcaatctc caaggatttt actgtgagat 600
atttggcggg aaaatgtcgg ggaagggtgc taaagggttg attatgggga aaccagcgg 660
tagcacaag gataaggaca agaagaagcc tatcactcgt tcttctcgag ctggtctcca 720
ggtagattat aatctccctc aactcctaag tcttccgtgt ctgtttcttt gggaatcgaa 780
atggtcttat acacctgaac gattagtaga tcgcgtttta gtggtagatc gatgagattc 840
tgagctagat ttggtaatat cagctgagaa ttagagacat tgggatgcga gatttggttt 900

```

```

tctattgtgt tatctgctgg agaattgttt cattaagctt ttatggttga tattgaaccc 960
gatctttgat ttcacggagt cttggttgta cagctacctt gtgaattgaa ttcggagttt 1020
ttttttaga gatttattgt catatatgaa atgtttctgg gagcaattga gatttgagta 1080
ttcatttagg ttccattgtt gtggctaatt gaatttacat tgtgtgcagt tcccagttgg 1140
taggggtgat cgtctgttaa agacaagggt cactgctcat ggaagggttg gagcaactgc 1200
agctggttac acagcagcaa tattggagta tctgactgca gaagttttgg agttggctgg 1260
taacgccagc aaggacttga aggtgaaacg tatctgcgcg aggcatttgc agcttgcgat 1320
tcgtggagat gaggagctcg atactctcat caaaggaact atagctggtg gtggagtcac 1380
ccctcatatc cacaagagtc tcatcaacaa atccgccaa gaataggact tttttagtta 1440
cccgtttgt tctgtgttgc ttttctgttt tctaaatgtt tttaagagtt gttgtttgat 1500
aagatgctag agaagctctt tttaggatcg tttgctattg ttcgttcgat cagcgtactt 1560
tgtgttagag acgccagtcg atttatctat ctttaaaaat gtattcgaat gattatccaa 1620
aaaccatttc tgactaccta ccttgctggg ttgttcgctg gagaagcttg aaagcaaatt 1680
cattgggaag gatttgtatt atctctaaat agaattcata tatacatcat acataagtaa 1740
aaatcacagg tttgtgttta agaaaattag gctgataata ttcacttggc ctagttagacg 1800
tcgatgtgat tctgaagcaa agttctttgt agcaaactcg gtgggagttt taatcccttt 1860
aagaatacac tgatgcctga ttt                                     1883

```

<210> 37

<211> 1438

<212> DNA

<213> Arabidopsis thaliana

<400> 37

```

attcgaatta tgaaaatcaa aaaggaatga agcgggaaca aaaccttggg gatttagttt 60
gaatcgtgat gaagaaggaa gatcagagct tgagggagat tcgaaatttc ctgcctcat 120
aacaaaatct gagaaataga tttgaaaaac agacaacact aggttacaaa aactgttact 180
cgatgaataa aaaaagagga ctttttcaaa tcttcacaca caaatttcac aaagaacccg 240
gattcaattt ttgaaaattg ggctctttgg taaaatgtaa aacgtttggg ccgaaaaaag 300
aagaaaaaaa caaaactgta aagaggcaaa gaggatattt tggtaattca ctctgacgcg 360
gatcctgaat ctgaattat tcaccgttga ttataacatt atctaacggt gataaacagc 420
gatccgcgta gtttcttctt attggttaag acgaatctaa aacagtatat aaactctgga 480
gaagatggag agagtccata acaacaaatt cgattcttat aactgtttcc ctctcatctt 540
tacacaaaag tattctaate gatttcaatg gcgggtcgtg gtaaaacact cggatctggg 600
tctgcgaaga aggcaacaac aagaagcagc aaagccggtc tccaattccc tgtgggtcgt 660
atcgctcggt tcttgaagaa aggcaaatat gccgaacgtg ttggtgcccg agctccggtt 720
tacttagccg ccgttctcga atacctcgcc gctgaggtaa ttctcttccc ctattcttca 780
aattttcgat cttttagttc aatttctata aaccctaatt ttgactgatt ttggggaaat 840
tttgaaaaat taggtattgg aattggctgg aaacgcagcg agggataaca agaagacgag 900
gattgttcca aggcataatt aattggcggg gaggaacgat gaagaattga gcaaattgct 960
tgagatgtg actattgcta atggaggtgt gatgcctaac attcacaatc ttcttcttcc 1020
taagaagacc ggtgcttcca agccatctgc tgaagacgat tgattaatca accaaatcca 1080
ctctcttggt ttttttgagt ttttaaggct ttttaagagt aatttagatt agatctatgg 1140
tgaagaaaga atctatcttc tgtgtttttt gaattgaatt gaatgttcat atgctttcaa 1200
tttcttatgg aatcaagatt ttaacttttc taggttttcg agttatgatg atgaaattct 1260
tagtcttata aatcactaaa gacttgggat ttttgattgg ttgacataaa gaatggactt 1320
ttgagttaaa tttgggaaag ctactgggaa tgacatcatg agaggtgtat aattgagcaa 1380
ctatgacata tattaanaaa gatctgaagg attgatgatg attgggtgggc caataatg 1438

```

<210> 38

<211> 1901

<212> DNA

<213> Arabidopsis thaliana

<400> 38

```

tcttaacaat caaaccaaag catataatat tctcttacca tttagtttta ccacaagcat 60

```

```

agtgcctaca accttttctca tgaaaaatgg atcttttctgt tacaaaagaa aaaaaaaagc 120
tgatttttaaa cgttttctaag aaatagaggg cttaatggca aaatgttgaa acatttttaag 180
gctccaaagc gaaaaattta accgccaaag cgtagggtttc cccccaagat tttgaaaata 240
tttaaaaact cccaccaaac tttttaattt taaaactcta atcccatctt attcaaccag 300
atttcgtttc tttcgtcctt tttttccttt tgcattctct cgtcgtcgtc tcaagggtact 360
ttacttctct ttttctctct tccaatattc gagatctggt tctgtctttc ttggatcgat 420
tctcgattct gttcttcgat ttagtcttct ttcgaataga tctggtagat ttaagcatta 480
tactcttctt tttctgattt cgtttttgtt tgactgtgta cggtttagatc tagaagaagg 540
aaacaacaat ttcaagagac atggcaggca aagggtggaaa aggactcgta gctgcgaaga 600
cgatggctgc taacaaggac aaagacaagg acaagaagaa acccatctct cgctctgctc 660
gtgctgggat tcaggtcatc tcttaaacc taaatttcgac gaccttggtt gactctgatt 720
ctttcctaatt tcatcagtac catttacatt ttttaggaata gatttgtttt tttggttcta 780
tgtaaaagca tgaggaagta aacttgctgg atatgtgtaa tttcttttac tcggtaccat 840
gttgatgttt ttgtcaatgt ttgtgctaata tatacaaat ttgtgtgctt gctcactggg 900
tgcttggtca tctgagaata catgttggtt ttgtttttgt ctccccattg tttaggtagt 960
gtcttatggg atgtgcccaa atgttccctt actctgtagc ttactattga tattgatgag 1020
tcatgagggg ttttaatatgt tttgtttggg tctagtatgt gcaatgttct gttttttatt 1080
aagttatact attttaatgg aactatttgg tgtgctgta tactgttttg acattgatgc 1140
tgtgcatagc catacaagta gagagattgg tcacaccgat actgtttttt tttttcagtt 1200
tccagttgga cgaattcaca ggcaactgaa gacccgagtc tcggcacatg gcagagttgg 1260
tgccactgca gccgtctaca cagcttcaat cctggagtat ctgacagcag aggttcttga 1320
gttggtctgg aatgcgagca aggatctcaa agtgaagagg ataacgcaa ggcattctga 1380
gttggcgatt agaggagatg aggagctgga cacatctac aagggaaacga ttgctggagg 1440
tgggtgtgat cctcacatcc acaagtctct catcaacaaa accaccaagg agtgatgtgt 1500
agctttttat ggtgtttgta tttctgtagt cttggactca ttttctttta tcttttctt 1560
agttctttga ctagtgttga cctcttctgg acatcctcag gtgtacatta gtttaattga 1620
actctttagg ttccttggtc aatcatatgt tctctttcta tgctattgtg atttgcttat 1680
tatgttttca agtgaaccgt tttctgtttt aaacaactga ggaaatcatt tactcgcatg 1740
ctctctggta accggactta caagtatctt ttagatatag aacttgttat caaacatcat 1800
cagtatttta tcaagtcaca tattccaaat caggcgcaaa tagcccaatc acaagtcaaa 1860
gactcaatat taaaaaaaaa agagtacatc attcattcac t 1901

```

<210> 39

<211> 1733

<212> DNA

<213> Arabidopsis thaliana

<400> 39

```

gatttagtgt ccaatagaaa gcatccaagt ttttgccaaa aaaaaagaaa gaaagcatcc 60
aagcaataca tataagtttc atttgcatta tattcaacag taccattttc atatcttggt 120
tcaaaaaata catcaaatta ttttccaaac cttcacatat aatttgagaa gaaatattac 180
aaatttaata taggttcagc ataattttaga aaatattatt caatgtttta aacttctcct 240
aaatttttga gtattgctat taatcctttt aatgtgaaca aaacattgaa gcgaagggtg 300
ccagatcagc aaatcatagc cgttgattca cttccaatcc aaaagctaac attcatcaac 360
tgacaaaacc aaccaacca ccaacttctt tcgctatctt acgccaaaagc tctcttaatt 420
cctccgtttg catatttttc ggtcagatca aaatcagaat cagaatcaaa tttctcgtcg 480
tgtcggagta aatcaagcca tggattccgg aaccaaaagt aagaaaggag ccgctggaag 540
aagaagtggg ggaggtccta agaagaaacc ggtttcccg tcggttaaat ccggtctaca 600
gtttcctgtc ggtaggatcg gtcggtatct taagaaagg cgttattcga agcgtgtcgg 660
aaccggagct ccggtctatc tcgcccggc cctcgagtat cttgctgctg aggtaataaa 720
gttctgaatt cagatcagct aatcatttca tcggaattat cgcagtttca tcgatttcac 780
tagaattctt gtgggttttg ttctgttgct tctgtgacca tctatagggt tagaatgtct 840
tcttctgatt ttagggtaaa ttgataatca tctgaggttg taaaattgaa tttgttagat 900
actatatcac gagtagatca acctcaagac atggtttcac tttcaattag gtttaacatc 960
tttgctttgc aaatctcaaa atcttagata gagatatatt agcgttacat aaaaactaaa 1020
gttgcatagt caataaaacc taaataaaac atctgcaagt aaacttcatt gagaatctat 1080
catcatgtaa caccgttttg agaacttgaa taccttggac tgatgtgcat gttacatgta 1140

```

```

actcttgtca acaaattctct gagtaactag gatatgcaaa tattgcatac taatcttttt 1200
gatcgaatgt gacaaaaccc catttttaaag tttacaagtc tgatccgtta tatatatgtt 1260
gtcgaatttag gttctcgcagc ttgctggtaa cgctgcaaga gataacaaaa agaaccgtat 1320
tataccacgc catgttctat tagcgggtgag gaacgcagag gagctaggga cactactcaa 1380
aggcgtaacc attgcacacg gcggtgtttt accaaacata aaccaatac tcttcccaa 1440
gaagtctgag aaagcagctt caactacaaa aacacccaaa tcaccatcaa aggcaaccaa 1500
atccccctaag aaatcttagt acttctttct tcttctctct gtataaccta ctgtttctat 1560
ctctctgtac gtttctctgt aaagacagaa cagaatatct ctttgttgtt gtgagaaagc 1620
ttagtttctc tgatcgctgt tgtgaaataa aaaatgcaac gtttcatata gattttgcac 1680
aatcaaaaag tattcatata aacaatgtat tattattcga ctatcatcat atg 1733

```

<210> 40

<211> 1438

<212> DNA

<213> *Arabidopsis thaliana*

<400> 40

```

ttaatacgac atgctaaaaa ttgattaatc atgttttagaa aaatatatac tatgataaac 60
ctgaaattgt gtcacacaat tttgatgaat gtatatacca catttccata ttatacgttt 120
taaaagtaag attttcataa attttaaaat tattcataac attcactaaa attagatgtg 180
tataattaac aaactaaaaa tatcattaat ctactatttt agtagttatt ttgcgaaaaa 240
atgtttgagt tacaaaaat tttcactatt taaatcatgt cgattatacc cactgaaggg 300
tatttccgtc aatcccaatt ctaacaatga attcaggagt ataaaaacgt aaattcaagc 360
gtgccaatta taaaccgtcg atcataatct aatccaacgg cagtaacatc gatccgcgtg 420
attgtttatt attggataag aatcactcaa ccgtctctac acagtatata taataaccaa 480
agagcgctct cttacgctta tcttaatttc cctcgcatcg agaattttca actttttcta 540
tctctcttcc caaatcacia atggcggggtc gcggcaaaaac tctcggtatc ggcgttgcta 600
agaaatcaac atcgagaagc agcaaagccg gtctccaatt ccccgttggg cgtatcgctc 660
gttttctaaa gaacggcaag tacgcaacac gtgttggtgc cggagctccg gtttacttag 720
ccgcccgttc cgaatacctc gccgctgagg taattatccc cttctctccc tatatctctt 780
tactctttcg atcttcaatt tcgtaaaacc ctaatttcta aattggatct gttgtgttgt 840
aggatttga attggctgga aacgcagcta gggataacaa gaagactagg attgtgccac 900
gtcacattca gctcgcggtg agaaacgatg aggagctgag taaactgctt ggagatgtga 960
cgattgctaa tggagggtgtg atgcctaaca ttcacagtct tcttcttccc aagaaagctg 1020
gtgcttcaa acccttcgct gatgaagatt agattaggga tttgtgttgt ggttgttttag 1080
ctaattaatg tgtagcttag tctttcatta gattagatct gaattagttt tcattaatgg 1140
tgttgtgtag tctctctttt gcttcaaaaa caagtattaa aatcttatta ttttgaattg 1200
aatccacaat caatacacat tgaagtccta acaaactact tcttcccagt gatatttgaa 1260
accaaatac taagaaactt agctgatttg gtaataggag aattcatagc catcaagtta 1320
tacagaacaa gctcaacttc ttcgattgat ggtcgagaat tgaattgtga aacaactttc 1380
aaagtacat taccttcttc ttcttcaacg agaacattcc atcttctccc actcacia 1438

```